



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,405	12/06/2001	Yong-Ling Ruan	1021565-000110	5391
21839 7590 01/04/2008 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER KALLIS, RUSSELL	
			ART UNIT 1638	PAPER NUMBER
			NOTIFICATION DATE 01/04/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com  
debra.hawkins@bipc.com

**Office Action Summary**

Application No.

10/003,405

Applicant(s)

RUAN ET AL.

Examiner

Russell Kallis

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/09/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 8, 15-17, 22, 24, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 15-17, 22, 24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Claims 4-7, 9-14, 18-21, 23, 25 and 28-30 have been canceled. Claims 1-3, 8, 15-17, 22, 24, and 26-27 are pending and examined.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 15-17, 22, 24, and 26-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn to a method for altering some unspecified feature or property of fiber length fiber length development, by providing cells of a plant with a polynucleotide capable of being translated into an active sucrose synthase linked to a constitutive promoter, a subclover stunt viral promoter, a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter, and plants, seeds transformed thereby; and fibers with unspecified altered development or properties.

Applicants describe constitutive promoters and a subclover stunt viral promoter known in the art both known in the art.

Applicants do not describe a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter.

The Federal Circuit has recently clarified the application of the written description requirement to inventions in the field of biotechnology. The court stated that, "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus." *See University of California v. Eli Lilly and Co.*, 119 F.3d 1559; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Applicants fail to describe a representative number of provide the sequences of any a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter. Furthermore, Applicants fail to describe structural features common to members of the broadly claimed claimed genus of promoters of a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter. Hence, Applicants fail to meet either prong of the two-prong test set forth by *Eli Lilly*. Furthermore, given the lack of description of the necessary elements essential for the activity of a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter, it remains unclear what features identify them. Since the genus of promoters comprising a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter has not been described by specific structural features, the specification fails to provide an adequate written description to support the breath of the claims.

***Claim Rejections - 35 USC § 103***

Claims 1-3, 8, 15-17, 22, 24, and 26-27 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Conner U.S. Patent 6,080,914 (published 27 June 2000) in view of Ruan Y. *et al.* Plant Physiology, Vol. 115, pp. 375-385 and in further view of Applicant's specification. This rejection is maintained for the reasons of record set forth in the Official action mailed 12/20/2005 and 9/08/2006. Applicant's arguments filed 10/09/2007 have been considered but are not deemed persuasive.

The claims are broadly drawn to a method for altering some unspecified feature or property of fiber length fiber length development, by providing cells of a plant with a polynucleotide capable of being translated into an active sucrose synthase linked to a constitutive promoter, a subclover stunt viral promoter, a fiber specific or fiber-enhanced promoter, a primary cell wall promoter or a secondary cell wall promoter, and plants, seeds transformed thereby; and fibers with unspecified altered development or properties.

Applicant asserts that the Examiner appears to have misapprehended the scientific basis of the invention in the response to Applicants' final amendment filed 9/08/2006 stating that (response page 6) and submits a scientific article by applicants published after the filing date as support. Applicant is reminded that the claims are not drawn to the alleged scientific basis for the invention published well after the filing date i.e. increasing the turgor in initial fiber cell"; as stated on page 6 of the response.

In addition, also contrary to Applicant's assertion on page 7 of the response lines that Ruan does not teach a role for sucrose synthase in fiber length development; the claims do not recite what feature of cotton fiber length development or fiber (see claim 24) has been altered.

Moreover, Applicants assert on page 7 of the response that there is, in fact, no correlation between fiber length and cellulose biosynthesis. It would be remiss upon the Examiner if he did not remind Applicant that Applicant has already stated for the public record in Ruan Y. *et al.* Plant Physiology, Vol. 115, pp. 375-385 that "Susy is essential for cellulose biosynthesis in developing cotton fibers" on page 382 in column 1 the first fully titled section. Further see figure 5 on page 381 where there is a positive correlation between fiber development and susy activity; and thus the reference does provide evidence that there is a correlation. Applicant is also reminded that correlation is not causation and that more than one correlation may exist.

In response to applicant's argument on page 8 of the response that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, and contrary to Applicant's assertions, one of ordinary skill in the art would have appreciated the sink specific expression characteristics of the promoters taught by Pat. 6,080,914 and Applicants' specification and that they would be useful when linked to SuSy for the genetic engineering of cotton seeds and balls as taught in the 6,080,914 patent; and that the teachings of Ruan would have further motivated one of ordinary skill in the art to transform cotton with a polynucleotide encoding a SuSy polypeptide as well, because Ruan teaches SuSy controls cellulose biosynthesis in cotton fiber synthesis and development (see arguments *supra*)

which is of importance in both solving research questions and in genetic engineering of cotton fiber.

In addition, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Further, with respect to Applicant's remarks that the strawberry promoter are not enabling the Examiner submits U.S. Patent 6268546 filed 6/7/1995 see col. 5 line 55 to column 6 line 33 and the claims.

No claim is allowed.

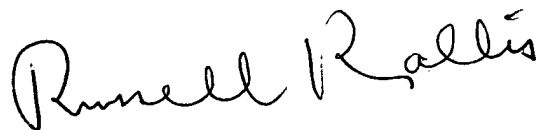
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kallis whose telephone number is (571) 272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Russell Kallis Ph.D.  
December 26, 2007

RUSSELL P. KALLIS, PH.D.  
PRIMARY EXAMINER

A handwritten signature in cursive script that reads "Russell Kallis".